1	2	(3)	4	5	(6)	(7)
M B ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	Part 0: Base					
Ben	0:5.16	line 407	te	ambiguous definition	Change "between a point and the geoid" to "to a point from the geoid"	AAS
Ben	0:5.41	line 517	te	definition is not consistent with other standards, such as ISO 19125 (OGC SF) and 13249-3 (SQL/MM). They allow interior but require straight line interpolation of boundary. Is this intentional?	Verify that this definition is correct in the context of this standard.	AIP – deleted phrase "for which the interior configuration is not directly specified" and added note "Usage is general, unless explicitly stated in other parts of this standard."
Ben	0:6		ed	Missing definitions for 0D and 1D		AAS
Ben	0:6	line 567	ed	wrong capitalization to achieve acronym	Change "Extensible" to "eXtensible"	RAS-W3C does not use "eXtensible" – see Extensible Markup Language (XML) 1.0 (Third Edition), http://www.w3.org/TR/2004/R EC-xml-20040204/
FS	Part 0; 7.2	Figure 1	ed	The "(from 19100)" annotation under each package does not actually refer to a real package. Likewise, "(from logical view)" is not a package reference.	Remove extra annotations from Figure.	AAS
Ben	0:7.3	line 608	ed	missing word	Add "an" before "encoding"	AAS
Ben	0:7.4.2	line 630	te	are entity names really unique in entire data dictionary or just within a given Part (i.e., theme or UML package) and if so why?		Entity names are unique only within a data theme.

1	2	(3)	4	5	(6)	(7)
M B1	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
Ben	0:7.4.2	lines 633-4	ed	unclear wording	Add underlined text: "Element names ar e unique within an entity <u>and therefore</u> by the combination of the entity and element names (example: Dataset.name) <u>are unique within a theme."</u>	AIP - Element names may not necessarily be unique within a theme, as worded. Better to break into two sentences: Element names are unique within an entity. The combination of entity and element names (example: Dataset.name) are unique within a theme.
Ben	0:7.4.3	line 639	ed	unclear wording	Change "data or metadata entity description" to "entity or element description"	AAS
Ben	0:7.4.4-5		ge	Obligation/condition and maximum occurrence should only apply to elements. Trying to use them for entities is wrong because there is no context – does it apply to the entire dataset or an association? If it is in the context of an association, which one if there are multiple ones? It is also redundant with the row which contains the role name which is where the obligation/maximum occurrence properly belongs.	Correct the text as specified in specific comments which follow and delete all values from Obligation/Condition and Maximum Occurrence columns in data dictionary tables where row is an entity. Note: may have implications on all other Parts	AAS, CCI
Ben	0:7.4.4.1	line 642-3	te	Improper description (see general comment 0:7.4.4-5)	Add underlined text, remove strikeout text: "Used only in rows containing elements, Obligation/Condition is a descriptor indicating whether the an entity or element shall always be populated (that is, contain a value or values) or sometimes will be populated for every instance of its owning entity. If the element is a role name, then the obligation/condition shall apply to the element indicated by the Data Type."	AAS

1	2	(3)	4	5	(6)	(7)
M B1	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
Ben	0:7.4.5		te	Improper description (see general comment 0:7.4.4-5)	Add underlined text, remove strikeout text:	AAS
					"Used only in rows containing elements, mMaximum occurrence specifies the maximum number of instances—the entity or the element may have."	
					At the end of the paragraph, add:	
					"If the element is a role name, then the maximum occurrence shall apply to the element indicated by the Data Type."	
ES RI	General		Т	It should be made clear that data types such as date", "value", "integer" are generic types and don't infer an implementation such as SQL or encoding.	Add a statement to this effect in Part 0 - 7.4.6	AAS
Ben	0:7.4.6	2 nd sentence	ed	Unclearwording	Add underlined text, remove strikeout text:	AAS
					The data type attribute is also used to define entities, stereotypes, and associations stereotypes for entities and entity names for elements which are role names.	
Ben	0:7.4.7	line 675	ed	Unclearwording	Add underlined text:	AAS
					"covered by the elements of that entity in the table."	
Ben	0:7.4.7	line 677	ed	Unclearwording	Replace "content of the field" with "data type of the element"	AAS
ES RI	Part-0/7.5.2		Т	The minimum metadata should not be provided in the Framework standards.	Remove clause 7.5.2	AAS

Date: 2/22/6

Document: INCITS Ballot 007-06 INCITS 1574-D, Information technology - Geographic Information Framework Data Content Standards.

1	2	(3)	4	5	(6)	(7)
M B1	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
FS	Part 0; 7.6	Figure 2	ed	The "(from transportation)" and "(from logical view)" annotations are not useful and are inconsistently applied (e.g., all parts of this standard which are NOT transportation lack an annotation.)	Remove extra annotations from Figure. Utilize standard UML notation to indicate hierarchy of packages	RAS - Packages without annotation are in the same directory as expressed in the UML modeling program being used. No ability to suppress this text.
Ben	0:7.7	line 747	ed	missing word	add "optional" before identifier authority	AAS
Ben	0:7.7	line 748	ed	wrong word	change "same" to "similar"	AAS
Ben	0:7.7	line 749	ed	wrong word	change "on" to "for"	AAS
Ben	0:7.8	line 764	ed.	extra word	delete "feature"	AAS
FS	Part 0; 7.8	Lines 765- 769	te	Declaring that the < <feature>> stereotype is equivalent to extending the abstract class feature is just asking for trouble. The usage of this non-standard equivalent to a simple UML expression will be far removed from this declaration with no reference back to where it is declared. Using this notation adds unnecessary complexity to the process of reading and understanding the meaning of the standard.</feature>	Use standard UML to express the specialization relationship. Change all figures in all parts of the specification which re-invent this particular wheel.	AIP – Standard UML has been used. Feature type inheritance is explicit in the UML model.
Ben	0:7.8	line 767	ed.	subject and verb disagreement	change "implement" to "implements" and "inherit" to "inherits"	AAS
FS	Part 0; 7.8	Lines 770-4	te	This paragraph claims that the standard "supports the transfer of data". This contradcts section 1.1, lines 257-8, which correctly states "this standard does not specify a particular structure for the interchange of data."	remove lines 770-774 and any other claims to support data interchange	RAS – the two statements are complementary. While the standard supports the transfer of data, it does not specify a particular encoding.
FS	Part 0; 7.8	Figure 3	te	ExternalResource is a re-invention of CI_Citation and friends, but much less expressive. 19115 will have to be extended with a class which recognizes the data source code list, but this approach is far better than defining a new metadata object which has no relation to the existing metadata structure.	Reformulate ExternalResource such that it extends the appropriate objects in 19115.	RAS – ExternalResource does not re-invent ISO 19115 objects.

Type of comment: ge = general te = technical ed = editorial

NOTE Columns 1, 2, 4, 5 are compulsory.

ISO electronic balloting commenting template/version 2001-10

	Document: INCITS Ballot 007-06 INCITS 1574-D, Information technology - Geographic Information
	Framework Data Content Standards.

1	2	(3)	4	5	(6)	(7)
M B ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
FS	Part 0; 7.8	Figure 3	ge	Class names "FeatureCollection" and "Feature" are way too general for the concepts they support. These classes encapsulate commonalities to the framework standard, and the framework standard only.	Provide more accurate names to FeatureCollection and Feature, (e.g., "FrameworkCollection" and "FrameworkFeature")	RAS – This approach is based on feature models used by ISO and OGC and can be used for data themes other than the seven Framework data themes. Feature and FeatureCollection are abstract features.
FS	Part 0; 7.8	Figure 3	ge	I wholeheartedly approve of the definition of the CodeList "DataTypes". This definition should be moved to 19103 so it does not have to be reinvented with every dependent standard.	Pat yourselves on back.	AAS
FS	Part 0; 7.8	Figure 3	ed	In the "DataTypes" codelist, the "real" member has some extra text after it.	remove extra text after "real" member	AAS
FS	Part 0; 7.8	Figure 3	te	The aggregation relationship between FeatureCollection and Feature is navigable from Feature - >FeatureCollection, but there is no role name, violating 19103.	Add role name to the navigable direction of this relationship.	AIP – role names added to both ends of the relationship.
FS	Part 0; 7.8	Figure 3	te	Multiplicity 1* on the Feature > Feature Collection role requires that every feature be a member of a collection. This is completely unnecessary and adds complexity to "simple" implementations.	Change multiplicity to 0*	AAS
Ben	0:7.8	Figure 3	te	Is it intentional that all features be part of at least one feature collection?	Change cardinality of aggregation association on FeatureCollection side to 0*	AAS

1	2	(3)	4	5	(6)	(7)
M B ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
Ben	0:7.8	Figure 3, Table 2	te	since association is bi-directional, role name is missing	Add "featureCollection" as role name on FeatureCollection end of association between Feature and FeatureCollection. Change domain in row 4 to be Lines 5-10. Add row to Table 2 after existing row 9 to accommodate this, with values (10, Role name: FeatureCollection, Collection of which this feature is a part, O, *, FeatureCollection, Unrestricted). Renumber subsequent rows.	AIP – the role name "collection" has been added to the FeatureCollection end of the association.
FS	Part 0; 7.8	Figure 3, Table 2, Lines 2 & 7	te	The metadata attribute of FeatureCollection and Feature is a CharacterString, which is an encoding of metadata content. As this is a content standard and not an encoding standard, metadata should be represented by the constructs defined in 19115 or extensions thereof. This is a violation of 19109, Sect. 8.5.2 rules 2&4.	Use 19115 metadata objects or extend 19115 in such a manner that content is defined. It may be appropriate to define a "FrameworkMetadata" extension which all parts could then extend.	RAS - The CharacterString data type allows for flexibility for inserting metadata formatted according to ISO 19115 or the FGDC metadata standard. See Section 7.5.2, Associating metadata entry with data transfer
FS	Part 0; 7.8	Figure 3; Table 2 Line 14	ge	The "attribute" member of Feature, and the ExtendedAttributes type are inadequately specified. ExtendedAttributes is defined as, "Group of properties that permit the identification and transport of unofficial feature attributes." 1. Is an ExtendedAttribute: a. similar to an augmented RecordType, meaning it applies to all geometries and topologies in the Feature? b. or does it apply to a specific geometry or topology object? 2. If 1.b above, how is the association between the particular attribute and geometry/topology made?	Clarify purpose and function of ExtendedAttributes data type and the attribute member of Feature	AIP: Geometry and topology elements are already specified for feature. The attribute element pertains to potentially repeating attributes. For more explanation, read the discussion following Table 2.

1	2	(3)	4	5	(6)	(7)
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FS	Part 0; 7.8	Figure 3; Table 2 Line 14	te	After clarification of ExtendedAttribute function and purpose above, if ExtendedAttribute performs a function similar to an extension to the Metadata specification, then it should be explicitly expressed as an extension to the appropriate objects in 19115.	Reformulate expression of ExtendedAttribute in terms of 19115 metadata objects if above clarification reveals duplication of purpose with 19115.	RAS – ExtendedAttribute is not intended as a duplication of purpose with ISO 19115.
Ben	0:7.8	Figure 3	ed	Feature class is abstract by virtue of the italicized class name. It would be more informative to use the stereotype "Feature", and to agree with Table 2	Change Feature class stereotype from "Abstract" to "Feature"	RAS – We are retaining the Feature class stereotype to highlight directly implementable features.
Ben	0:7.8-9	Figure 3, Tables 2-4, lines 790-1, 795-800	ed	Class names should be singular	Change "ExtendedAttributes", "ResourceTypes" and "DataTypes" to be singular in class name and therefore as attribute data types in Figure and corresponding tables and text Note: will have impact on other Parts	AAS, CCI
Ben	0:7.8	Figure 3, Tables 3-4	ed	CodeList values should be lower camel case	Change "DTD" to "dtd", "XML Schema" to "xmlSchema", "URL" to "url", and "Boolean" to "boolean" in Figure and Tables	AAS
Ben	0:7.8	Figure 3, Table 2	ed	redundant name	Change Identifier's "identifier" attribute to "id" to avoid having Feature.identifier.identifier in Figure and in row 11 of Table 2	AAS
Ben	0:7.8	Table 2 row 1	te	Data Type shown for FeatureCollection is "Feature" yet neither Figure 3 nor text in clause 7.8 say that a FeatureCollection is itself a feature	Change Table or Figure/Text to agree.	AAS
Ben	0:7.8	Table 2 row 3	ed	Missing Definition	Add "Features in the feature collection."	AAS
Ben	0:7.8	Table 2 rows 3, 5, 6, 8, 9, 16, 22	ed	Stereotype is redundant as it appears elsewhere in the Table as the Data Type on an entity line	Remove all stereotype prefixes in the Data Type column for rows which are elements Note: this will impact other Parts as well	RAS – the use of stereotype prefixes for rows which are elements is consistent with other ISO standards

Date: 2/22/6

Document: INCITS Ballot 007-06 INCITS 1574-D, Information technology - Geographic Information Framework Data Content Standards.

1	2	(3)	4	5	(6)	(7)
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Ben	0:7.8	Table 2 rows 4, 10, 14, 20	ed	Improper use of Obligation/Condition and Maximum Occurrence fields in an entity row (see general comment 0:7.4.4-5)	Delete Obligation/Condition and Maximum Occurrence values	AAS
Ben	0:7.8	Table 2 row 7	ed	missing words	Add "or URI" to end of Domain value	AAS
Ben	0:7.8	Table 2	ed	each occurrence of an ExtendedAtrribute is for a single	Add underlined text, remove strikeout text:	AAS
		row 14		attribute	Group of properties Property that permits the identification and transport of an unofficial feature attributes	
Ben	0:7.8	Table 2 row 18	ed	Data Type and Domain do not agree with Figure 3	Change Data Type from "CharacterString" to "DataType".	AAS
		1011 10			Change Domain to "Unrestricted"	
Ben	0:7.8	Table 2	ed	When Data Type column value is a CodeList or	Change Domain to "Unrestricted"	AAS
		row 22		Enumeration, the Domain is already restricted to these values (or extensions in the case of CodeList) so Domain should be "Unrestricted". As it currently stands on row 22, the domain says that the listed code list values cannot be extended.	Note: this will impact other Parts as well	
Ben	0:7.8	line 788	te	Transportation parts offer an alternative way of defining	Add a new final sentence:	AAS
				attributes for which the proposed Extended Attribute scheme will not work	"For Transportation parts of this standard, events provide an alternative method of extending attributes when their values are not necessarily constant for the entire length of a feature."	
Ben	0:7.9		ed	The Code lists are still part of the "Framework feature model" so the clauses are improperly numbered	Change 7.9 to 7.8.1, 7.9.1 to 7.8.1.1, and 7.9.2 to 7.8.1.2	AIP – the text immediately following 7.8 should be placed under a new heading 7.8.1. Therefore, the new section headings should be 7.8.2, 7.8.2.1, and 7.8.2.2

Type of comment: ge = general te = technical ed = editorial

NOTE Columns 1, 2, 4, 5 are compulsory.

ISO electronic balloting commenting template/version 2001-10

1	2	(3)	4	5	(6)	(7)
M B1	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
Ben	0:7.9.1	Table 3	te	missing Definitions		AAS – definitions have been added
FS	Part 0; 7.9.2	Lines 796-9	ed	Too chatty and does a poor job of redefining a code list's function. Line 800 is good enough.	Remove paragraph at lines 796-9	AIP –Most text in lines in 796-799 has been deleted.
Ben	0:7.9.2	line 798	ed	extra word	delete leading "A"	NLA – see resolution to comment on lines 796-799 - submitted by FS
Ben	0:7.9.2	line 800	ed	redundant word	delete "non-exhaustive"	AAS
Ben	0:A.4	line 838	ed	capitalization is not consistent with usage in Clause 7.5.1 on line 684	Change line 684 or 838 to be consistent	AIP - lines 684 and 838 changed to consistent with the recommended bibliographic citation in the FGDC metadata standard.
Ben	0:B.2.1.2	line 861	ed	strange wording	change "new, subword" to "word"	AAS
Ben	0:B.2.1.2	line 862	ed	class names need only be unique within a package (i.e., or part)	change "the entire data dictionary" to "a part"	AAS
Ben	0:B.2.2		ed	missing < <feature>> stereotype</feature>		AAS
Ben	0:B.2.3	line 888	ed	wrong wording	change "the object" to "all objects"	AAS
Ben	0:B.3.1.3	lines 942-3	ed	wrong wording	change "the number of instances" of a class to "each instance" of a class.	AAS
Ben	0:B.3.1.3	lines 945-52	ed	wrong wording	change every occurrence of "with one instance" to "with each instance"	AAS
Ben	0:B.3.1.3	after line 952	ed	default (missing) multiplicity not explained	Add after line 952:	AAS
					"If not shown, the multiplicity is the default value of 1 (one).	
Ben	0:B.3.2	lines 954	ed	missing word	add "in" before "which"	AAS

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Ben	0:B.3.2	lines 956	ed	missing wording	add to the end of the sentence ", if allowed by the multiplicity"	AAS
Ben	0:B.3.2	lines 957	ed	wrong word	change "the end" to "that end"	AAS
Ben	0:B.3.3	lines 964	ed	wrong word	change "closed" to "filled"	AAS
Ben	0:B.3.3	lines 964	ed	wrong word	change "the end" to "that end"	AAS
Ben	0:B.3.4	lines 968	ed	wrong word	change "specified" to "specialization"	AAS
Ben	0:B.3.4	Figure B.3	ed	text illegible	increase size of text	AAS
Ben	0:B.3.4	line 978	ed	wrong word	change "where" to "anywhere"	AAS
Ben	0:B.3.4	line 982	ed	incomplete wording	change "attributes or operations" to "attributes, operations, or associations"	AAS
ES RI	Part - 0 /Annex C		Т	Framework standards should show the structure and content for the specified themes. Encoding must be covered in a separate document. This document should be designed to remain valid as encoding methods change.	Remove annex C.	AIP – however, the annex shall be retained so that software developers know that a reference implementation has been created. The schemas will be updated and maintained to remain consistent with the document.
Ben	0:C.1	line 990	ed	wrong capitalization for acronym	change "Extensible" to "eXtensible"	RAS – the usage is consistent with what is used by the World Wide Web Consortium (W3C) .
Ben	0:C.1	line 991	ed	first instance of OGC should have full name	change "OGC" to "Open Geospatial Consortium (OGC)"	AAS

	Document: INCITS Ballot 007-06 INCITS 1574-D, Information technology - Geographic Information	
	Framework Data Content Standards.	

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Ben	0:C.4	lines 1016- 1018	ed	outdated reference	Change "OGC 02-023r4, 2003, OpenGIS® Geographic Markup Language (GML) implementation specification, Version 3.00, Open GIS Consortium, Inc., http://www.opengis.org/docs/02-023r4.pdf, accessed January 2006" "OGC 03-105r1, 2004, OpenGIS® Geography Markup Language (GML) Encoding Specification, Version 3.1.1, Open Geospatial Consortium, Inc., http://www.opengis.org/docs/03- 105r1_GML_3.1.zip"	AAS